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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,122	12/07/2000	Ellen Marie Eide	YOR920000648US1	9601

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EXAMINER

AZAD, ABUL K

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,122

Applicant(s)

EIDE ET AL.

Examiner

ABUL K. AZAD

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12 and 15-24 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Claims 1-24 are pending in this Office Action.

Specification

2. The disclosure is objected to because of the following informalities: It is unclear according to specification Page 4, lines 15-18, and Page 5, lines 4-8, whether the invention boosted energy of the pitch contour from below 10 Hertz or boosted with the range +/-10 Hz.

Appropriate correction is required.

Claim Objections

3. Claims 2, 11, 18 are objected to because of the following informalities: it is unclear whether the energy increased within the range of 10 Hz or from below 10 Hz. For examination purpose it is interpreted as to the amount of energy increased within the range of 10 Hz. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 7-9, 17, 19-21 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Person (US 5,400,434).

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As per claim 1, Pearson teaches, "a method for synthesizing speech",
comprising:

"generating a pitch contour for said synthesized speech" (col. 5, lines 63-68,
Particularly read on "the input pitch contour is generated I the prosodic component of
the text-to-speech system); and

"increasing an amount of energy in low frequency components of said pitch
contour" (col. 7, lines 7-18, particularly read on "the frequency can be raised by taking
fewer points").

As per claim 3, Pearson teaches, "interpolating discrete pitch values to generate
said pitch contour"(col. 6, lines 55-68, particularly read on "to produce varying pitch,
interpolation is performed within the table").

As per claim 7, person teaches, "wherein said increasing step further comprises
the step of filtering said pitch contour with an impulse response filter having a pole at a
desired low frequency value" (col. 6, lines 12-41).

As per claim 8, Pearson teaches, "wherein said increasing step serves to add
vibrato to said pitch contour" (col. 7, lines 19-48, reads on "cross-fading").

As per claim 9, Pearson teaches, "wherein said pitch contour comprises a pitch
value associated with each syllable of said speech" (col. 5, lines 41-58).

As per claim 17, Pearson teaches, "a method for synthesizing speech",
comprising:

“generating a pitch contour for said synthesized speech” (col. 5, lines 63-68, Particularly read on “the input pitch contour is generated I the prosodic component of the text-to-speech system); and

“filtering said pitch contour with an impulse response filter having a pole at a desired low frequency value” (col. 6, lines 12-41).

As per claim 19, Pearson teaches, “further comprising the step of interpolating discrete pitch values to generate said pitch contour” (col. 6, lines 55-68, particularly read on “to produce varying pitch, interpolation is performed within the table”).

As per claim 20, Pearson teaches, “wherein said increasing step serves to add vibrato to said pitch contour” (col. 7, lines 19-48, reads on “cross-fading”).

As per claim 21, Pearson teaches, “wherein said pitch contour comprises a pitch value associated with each syllable of said speech” (col. 5, lines 41-58).

As per claim 22, Pearson teaches, “a pitch predictor that generates a pitch contour for said synthesized speech” (col. 5, lines 63-68, Particularly read on “the input pitch contour is generated I the prosodic component of the text-to-speech system); and

“a low frequency energy booster to increase an amount of energy in low frequency components of said pitch contour” (col. 7, lines 7-18, particularly read on “the frequency can be raised by taking fewer points”).

As per claim 24, Pearson teaches, “wherein said low frequency energy booster filters said pitch contour with an impulse response filter having a pole at a desired low frequency value” (col. 6, lines 12-41).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 10, 12, 15, 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearson (US 5,400,434) in view of Antonov (US 4,278,838).

As per claim 10, Pearson teaches, "a method for synthesizing speech",
comprising:

"generating a pitch contour for said synthesized speech" (col. 5, lines 63-68,
Particularly read on "the input pitch contour is generated I the prosodic component of
the text-to-speech system).

As per claims 4, 10 and 23, Pearson does not explicitly teach, "adding band
limited noise to said pitch contour". However, Antonov teaches, "adding band limited
noise to said pitch contour" (col. 4, line 44 to col. 5, line 10). Therefore, it would have
been obvious to one of the ordinary skill in the art at the time of the invention to use
Antonov's teaching in the invention of Pearson to increase energy of the pitch contour
so as to obtain natural-sounding speech from the loudspeaker (Abstract).

As per claim 12, Pearson teaches, "further comprising the step of interpolating
discrete pitch values to generate said pitch contour" (col. 6, lines 55-68, particularly read
on "to produce varying pitch, interpolation is performed within the table").

As per claim 15, Pearson teaches, "wherein said adding step serves to add vibrato to said pitch contour" (col. 7, lines 19-48, reads on "cross-fading").

As per claim 16, Pearson teaches, "wherein said pitch contour comprises a pitch value associated with each syllable of said speech" (col. 5, lines 41-58).

8. Claims 2, 11, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearson (US 5,400,434) as applied to claims 1, 10 and 17 above, and further in view of Narayan (US 5,490,234).

As per claims 2, 11 and 18 Person does not explicitly teach, "wherein said low frequency components are below approximately 10 Hz". However, Narayan teaches, "wherein said low frequency components are below approximately 10 Hz" (col. 12, lines 35-36, a pitch should rise linearly from 220 Hz to 300 Hz). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to increase pitch about 10Hz as teaches by Narayan so as to produce natural sounding speech output.

Allowable Subject Matter

9. Claims 5, 6, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(703) 305-3838**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(703) 305-9645**.

Any response to this action should be mailed to:

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9314

(For informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center's Customer Service Office at telephone number **(703) 306-0377**.


Abul K. Azad

June 1, 2004